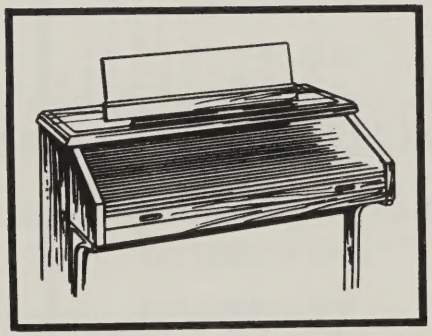
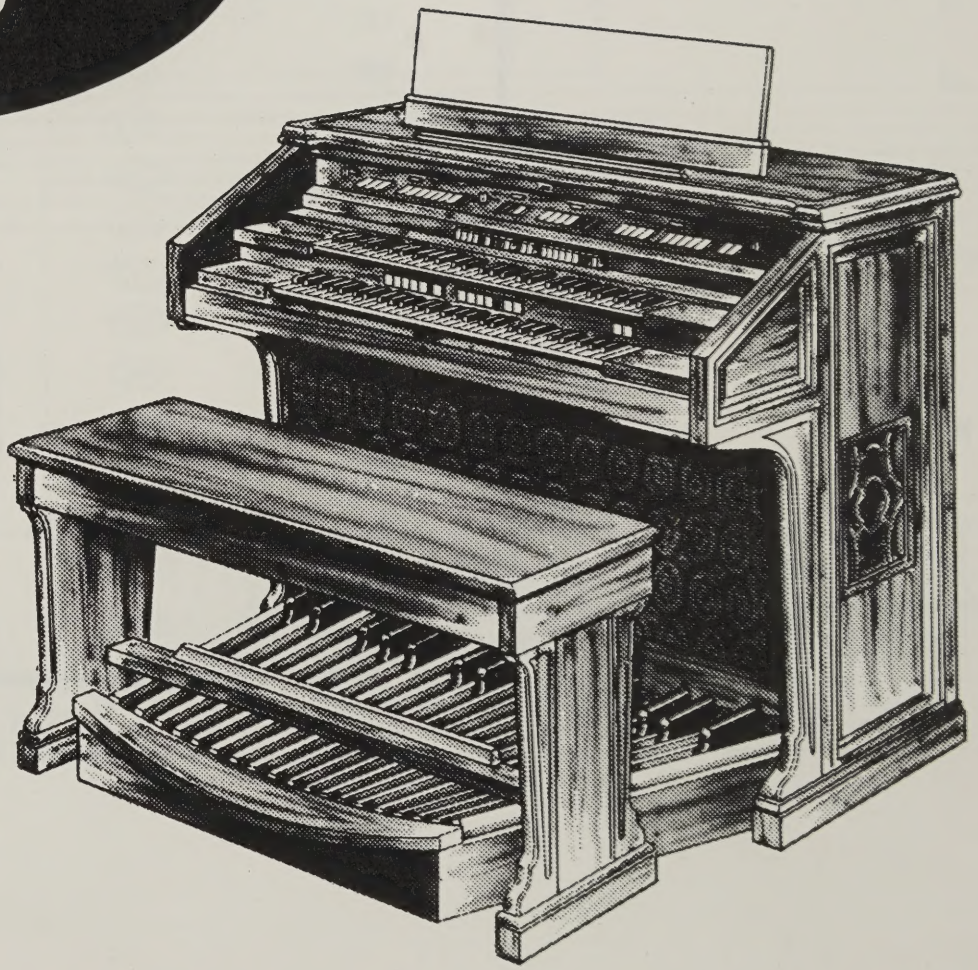
HAMMOND
Console
820165

Logic & Control Wiring Diagram





Console
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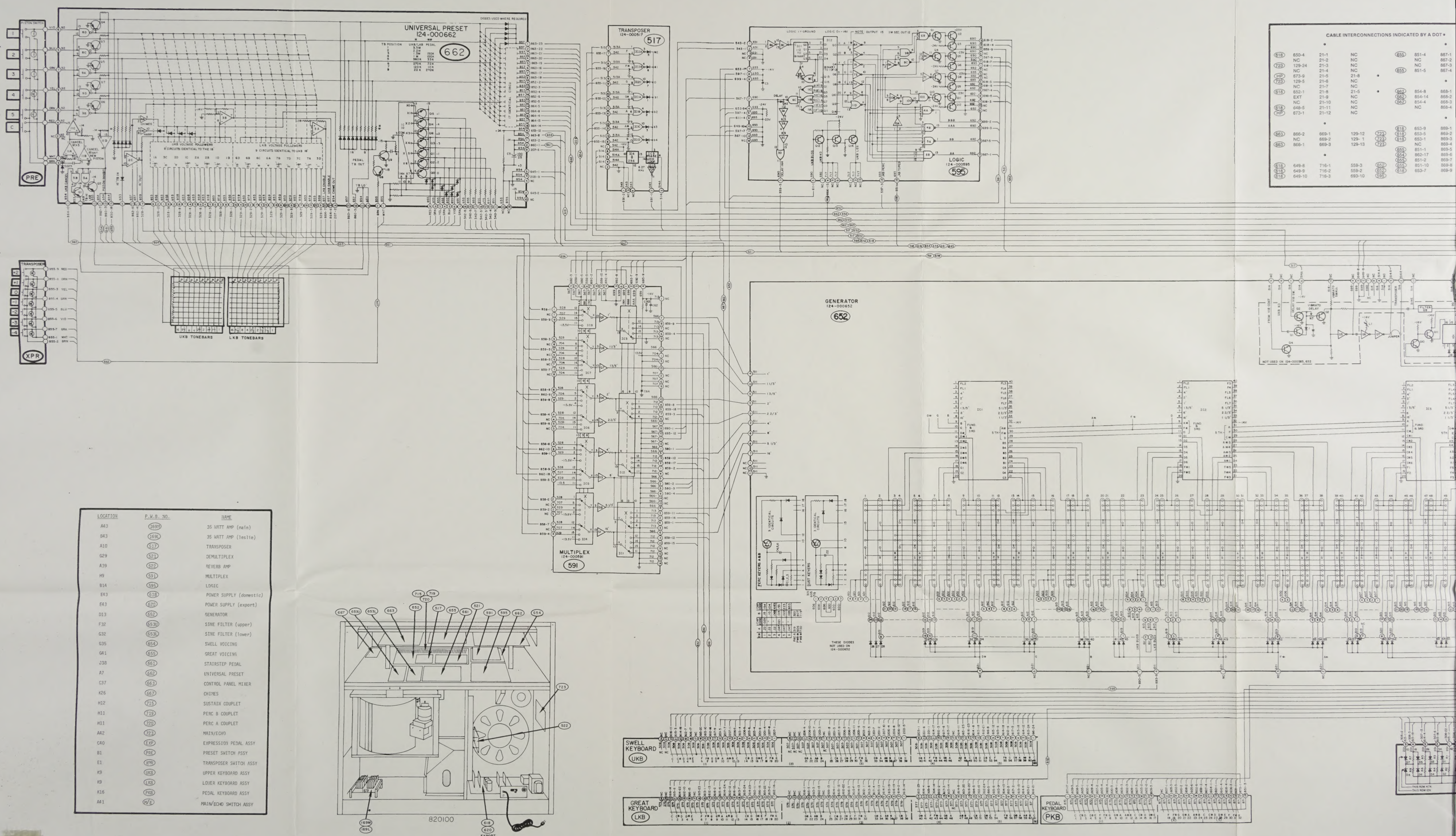
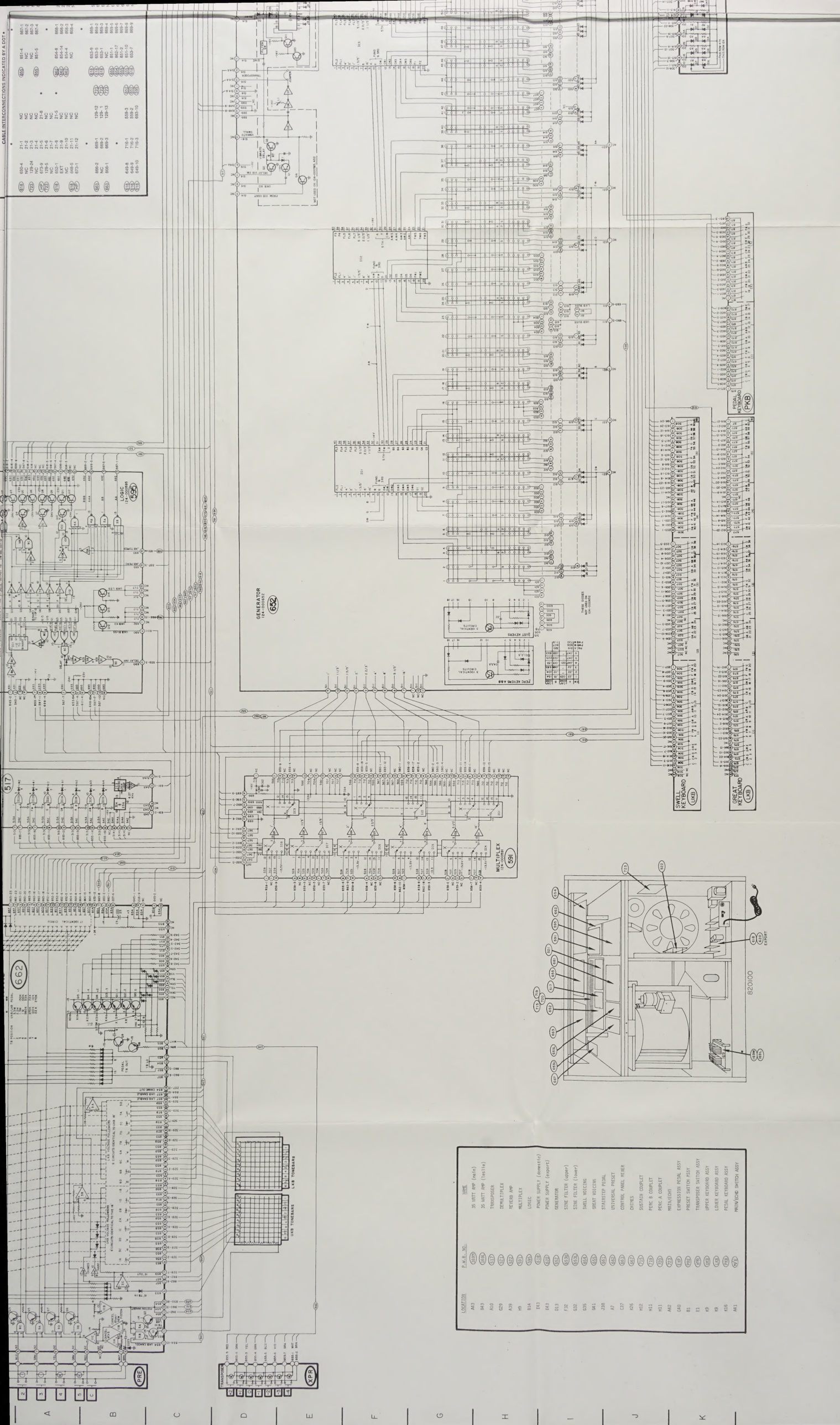


LOCATION	P.W.B. NO.	NAME
A43	169H	35 WATT AMP (main)
B43	169L	35 WATT AMP (leslie)
A10	517	TRANSPOSER
G29	521	DEMULTIPLEX
A39	522	REVERB AMP
H9	591	MULTIPLEX
B14	595	LOGIC
E43	618	POWER SUPPLY (domestic)
E43	620	POWER SUPPLY (export)
D13	652	GENERATOR
F32	653U	SINE FILTER (upper)
G32	653L	SINE FILTER (lower)
G35	654	SWELL VOICING
G41	655	GREAT VOICING
J38	661	STAIRSTEP PEDAL
A7	662	UNIVERSAL PRESET
C37	663	CONTROL PANEL MIXER
K26	667	CHIMES
H12	715	SUSTAIN COUPLET
H11	719	PERC B COUPLET
H11	720	PERC A COUPLET
A42	723	MAIN/ECHO
C40	EXP	EXPRESSION PEDAL ASSY
B1	PBC	PRESET SWITCH ASSY
E1	XPR	TRANSPOSER SWITCH ASSY
K9	UKB	UPPER KEYBOARD ASSY
K9	LKB	LOWER KEYBOARD ASSY
K16	PKB	PEDAL KEYBOARD ASSY
A41	M/E	MAIN/ECHO SWITCH ASSY

CABLE INTERCONNECTIONS INDICATED BY A DOT •

618	650-4	21-1	NC		655	851-4	867-1
	NC	21-2	NC			NC	867-2
723	129-24	21-3	NC			NC	867-3
	NC	21-4	NC		655	851-5	867-4
HP	673-9	21-5	21-8	•			•
723	129-5	21-6	NC				
	NC	21-7	NC				
618	652-1	21-9	21-5	•	662	854-8	868-1
	EXT	21-9	NC		662	854-14	868-2
	NC	21-10	NC		662	854-4	868-3
HP	648-5	21-11	NC			NC	868-4
618	673-1	21-12	NC				•
HP							
		•					
663	866-2	669-1	129-12	723	618	853-9	869-1
	NC	669-2	129-1	723	618	853-5	869-2
663	866-1	669-3	129-13	723		NC	869-3
						NC	869-4
		•			654	851-1	869-5
					654	862-17	869-6
618	649-8	716-1	559-3	620	655	851-2	869-7
618	649-9	716-2	559-2	620	655	851-10	869-8
618	649-10	716-3	693-10	595	618	853-7	869-9


CABLE INTERCONNECTIONS INDICATED BY A DOT •
GENERATOR 124-0000/02 682
LOGIC 124-0000/01 596
MULTIPLEX 124-0000/01 591
SWELL KEYBOARD (UKB)
GREAT KEYBOARD (LKB)
PEDAL KEYBOARD (PKB)
LKB TONEBARS
UKB TONEBARS
PRE
PRP
820100
EXPORT
LOCATION
P.W.B. NO.
NAME
35 WATT AMP (main)
35 WATT AMP (leslie)
TRANSPOSER
DEMULTIPLEX
REVERB AMP
MULTIPLEX
LOGIC
POWER SUPPLY (domestic)
POWER SUPPLY (export)
GENERATOR
SINE FILTER (upper)
SINE FILTER (lower)
SWELL VOICING
GREAT VOICING
STAIRSTEP PEDAL
DIVIDERGAL PRESET
CONTROL PANEL MIXER
CHIMES
SUSTAIN COUPLET
PEDAL B COUPLET
PEDAL A COUPLET
MAIN/ECHO
EXPRESSION PEDAL ASSY
PRESET SWITCH ASSY
TRANSPOSER SWITCH ASSY
UPPER KEYBOARD ASSY
LOWER KEYBOARD ASSY
PEDAL KEYBOARD ASSY
MAIN/ECHO SWITCH ASSY

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27

UNIVERSAL PRESET
124-000662
662

TRANSPOSER
124-000517
517

LOGIC
124-000595
595

GENERATOR
124-000652
652

MULTIPLEX
124-000591
591

CABLE INTERCONNECTIONS INDICATED BY A DOT •

618	650-4	21-1	NC	855	851-4	867-1	NC	
	NC	21-2	NC		NC	867-2	NC	
723	129-24	21-3	NC		NC	867-3	NC	
	NC	21-4	NC	856	851-5	867-4	871-18	PKB
HP	673-9	21-5	21-8	•				
723	129-5	21-6	NC			•		
	NC	21-7	NC					
618	652-1	21-8	21-5	•	862	854-8	868-1	207-6 667
	EXT	21-9	NC		862	854-14	868-2	207-2 667
	NC	21-10	NC		862	854-4	868-3	203-9 667
618	648-5	21-11	NC			NC	868-4	NC
HP	673-1	21-12	NC					
		•					•	
663	866-2	669-1	129-12 723		618	653-9	869-1	559-11 521
	NC	669-2	129- 1 723		618	653-5	869-2	693-4 595
663	866-1	669-3	129-13 723		618	653-1	869-3	693-7 595
						NC	869-4	NC
		•			855	851-1	869-5	693-15 595
					854	862-17	869-6	618-8 652
					855	851-2	869-7	618-9 652
618	649-8	716-1	559-3 652		855	851-10	869-8	618-10 652
618	649-9	716-2	559-2 652		618	653-7	869-9	NC
618	649-10	716-3	693-10 595					

SWELL KEYBOARD (UKB)

GREAT KEYBOARD (LKB)

PEDAL KEYBOARD (PKB)

CHIMES 124-000667
667

820100

(723)	NC	21-2	NC			NC	867-2	NC
	129-24	21-3	NC			NC	867-3	NC
	NC	21-4	NC		(655)	851-5	867-4	871-18 (PKB)
(HP)	673-9	21-5	21-8	•				
(723)	129-5	21-6	NC				•	
	NC	21-7	NC					
(618)	652-1	21-8	21-5	•	(662)	854-8	868-1	207-6 (667)
	EXT	21-9	NC		(662)	854-14	868-2	207-2 (667)
	NC	21-10	NC		(662)	854-4	868-3	203-9 (667)
(618)	648-5	21-11	NC			NC	868-4	NC
(HP)	673-1	21-12	NC					
		•					•	
(863)	866-2	669-1	129-12 (723)		(618)	853-9	869-1	559-11 (521)
	NC	669-2	129- 1 (723)		(618)	853-5	869-2	693-4 (595)
(863)	866-1	669-3	129-13 (723)		(618)	853-1	869-3	693-7 (595)
						NC	869-4	NC
					(655)	851-1	869-5	693-15 (595)
					(654)	862-17	869-6	618-8 (652)
					(655)	851-2	869-7	618-9 (652)
(618)	649-8	716-1	559-3 (652)		(655)	851-10	869-8	618-10 (652)
(618)	649-9	716-2	559-2 (652)		(618)	853-7	869-9	NC
(618)	649-10	716-3	693-10 (595)					

LOGIC
124-000595
595

GENERATOR
124-000652
652

MULTIPLEX
591

SWELL KEYBOARD
UKB

GREAT KEYBOARD
LKB

PEDAL KEYBOARD
PKB

CHIMES 124-000667
667

820100

EXPORT

28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45

A B C D E F G H I J K

CONTROL PANEL MIXER PWB. 124-000663 (663)

REVERB AMPLIFIER 124-000522 (522)

MAIN / ECHO PWB 124-000723 (723)

MAIN AMPLIFIER 124-000169 (169M)

LESLIE AMPLIFIER 124-000169 (169L)

POWER SUPPLY 124-000618,620 (618) (620) exp.

DEMULTIPLEX 124-000821 (521)

SINE FILTER UKB 124-000653 (553U)

SINE FILTER LKB 124-000653 (553L)

CONT PANEL-SWELL VOICE 124-000654 (654)

CONTROL PANEL GREAT VOICE 124-000655 (655)

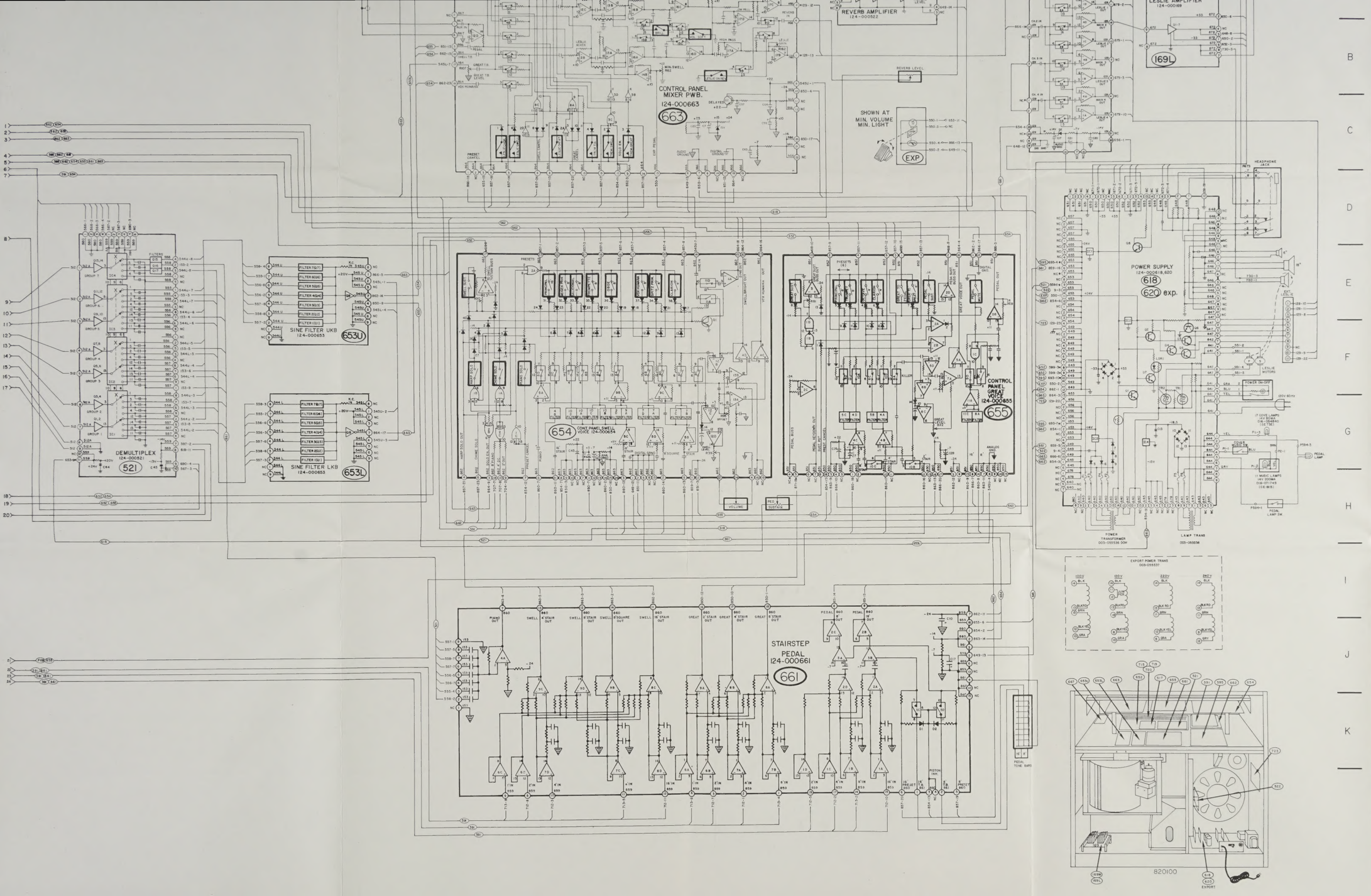
STAIRSTEP PEDAL 124-000661 (661)

SHOWN AT MIN. VOLUME MIN. LIGHT

LOCATION	P.W.B. NO.	NAME
A43	(699)	35 WATT AMP (main)
B43	(698)	35 WATT AMP (leslie)
A10	(617)	TRANSPOSER
G29	(621)	DEMULTIPLEX
A39	(622)	REVERB AMP
H9	(691)	MULTIPLEX
B14	(695)	LOGIC
E43	(618)	POWER SUPPLY (domestic)
E83	(620)	POWER SUPPLY (export)
D13	(652)	GENERATOR
F32	(653U)	SINE FILTER (upper)
C37	(653L)	SINE FILTER (lower)
G35	(654)	SWELL VOICING
G41	(655)	GREAT VOICING
J36	(661)	STAIRSTEP PEDAL
A7	(662)	UNIVERSAL PRESET
C37	(663)	CONTROL PANEL MIXER
K26	(667)	CHIMES
H12	(715)	SUSTAIN COUPLET
H11	(719)	PERC B COUPLET
H11	(720)	PERC A COUPLET
A62	(723)	MAIN/ECHO
C40	(EXP)	EXPRESSION PEDAL ASSY
B1	(PSE)	PRESET SWITCH ASSY
E1	(PK)	TRANSPOSER SWITCH ASSY
K9	(KB)	UPPER KEYBOARD ASSY
K9	(KB)	LOWER KEYBOARD ASSY
K16	(PD)	PEDAL KEYBOARD ASSY
A41	(SE)	MAIN/ECHO SWITCH ASSY

TEST AND ADJUSTMENT PROCEDURE

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT NO. BOARD
1	Frequency & Tremolo	a) Swell 4' Tonebar		Freq. Counter	J543 Pin 4	Tuning Coil 124-66
		b) Tremolo Delay	Play any Swell Key	Freq. Counter	IC6 Pin 3 or 4	124-66 R35
		c) Tremolo Delay	Key 25	Scope 2 V Div.		124-66 R15
		d)			IC 7 pin 7	124-66 R61
		e) Tremolo on Tonebar Swell Tonebar 008808008	25,29,32		Main Spkr	124-66 R51
2	Main Level	Swell Tonebar 008808008	25,29,32		Main Spkr	124-66 R176
3	Minimum Level	Min. Swell 008808008	25,29,32		Main Spkr	124-66 R62
4	Great Level Tonebar	Great Tonebar 008808008	25,29,32		Main Spkr	124-66 R107
5	Leslie Level	U/M Tonebar 00088008 Leslie Swell Tab	U/M 25,29,32		Leslie Speaker	124-66 R162
6	Pedal Level	Pedal Tonebar 88	13		Main Speaker	124-66 R109
7	Swell Level	Principal 16' Gelgen Principal 8' Spitz Principal 4'	Swell 25,29,32		Main Speaker	124-66 R39
8	Great Voices Level	Principal 8' Octave 4'	Great 25,29,32		Main Speaker	124-66 R22
9	Reverb	Leslie Swell 000607080	25,26,27 28,29		Main Speaker	
10	Sustain	a) Swell Sustain Tab Swell 8' tonebar	Key 25 Repeatedly		Main Speaker	124-66 R90
		b) Great Sustain Tab Great 8' tonebar	Key 25 Repeatedly		Main Speaker	124-66 R81
11	Minimum Thump	Vox Humana 8' only	Swell Key 61 repeatedly		Main Speaker	124-66 R95
12	Feedthru	All Swell tonebars position 8			Main Speaker	124-66 R2
13	Hum and Noise	Leslie Chorale		RMS VM 30 MV "	Main Speaker Leslie Speaker	

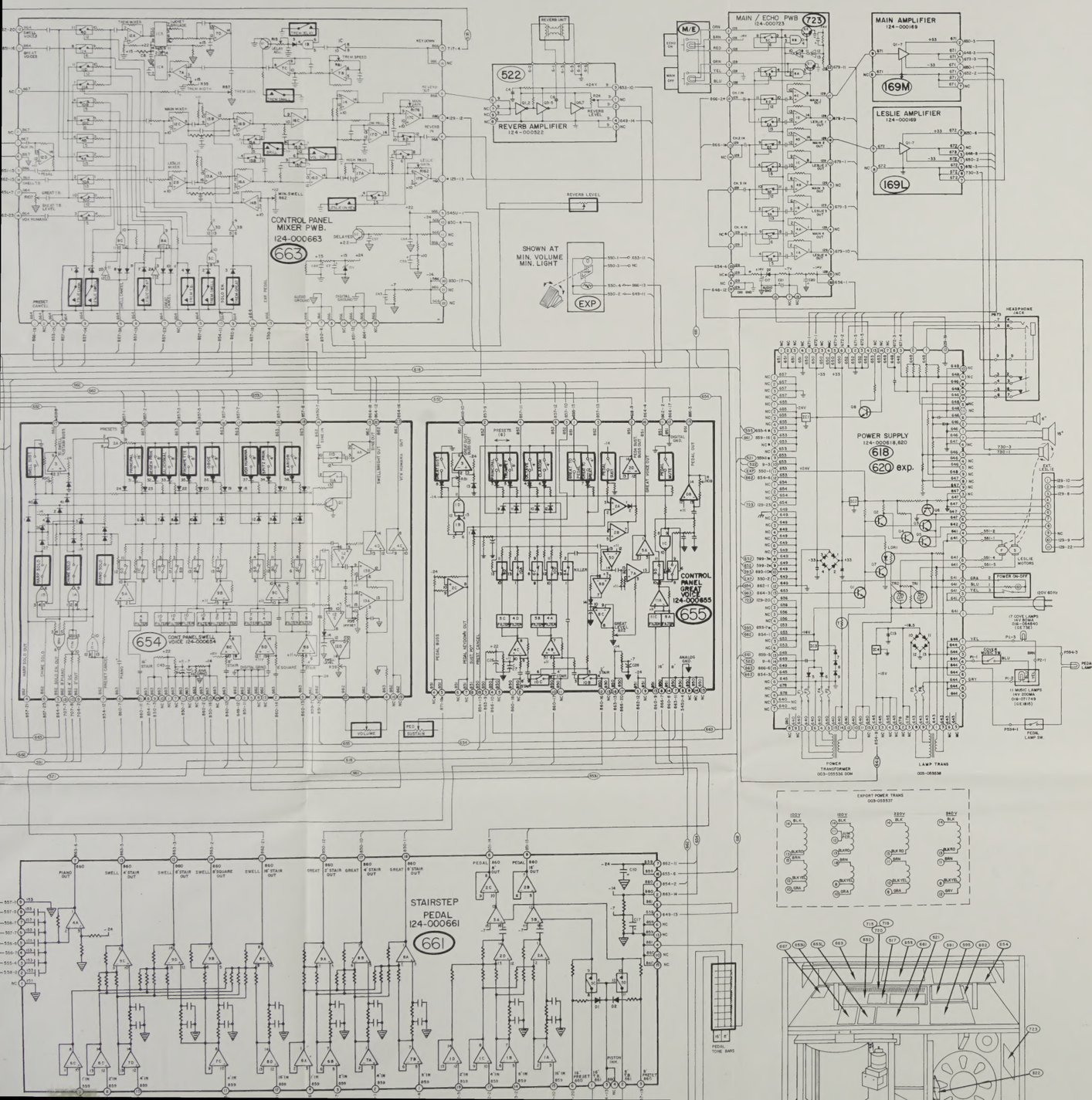


TEST AND ADJUSTMENT PROCEDURE

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT. AND BOARD
1	Frequency & Tremolo	a) Swell 4' Tonebar		Freq. Counter	J543 Pin 4	Tuning Coil 124-652
		b) Tremolo Delay	Play any Swell Key	Freq. Counter	IC6 Pin 3 or 4	124-663 R35
		c) Tremolo Delay	Key 25	Scope 2 V Div.		124-663 R15
		d)			IC 7 pin 7	124-663 R61
		e) Tremolo on Tonebar Swell Tonebar 008888008	25,29,32		Main Spkr	124-663 R57
2	Main Level	Swell Tonebar 008888008	25,29,32		Main Spkr	124-663 R176
3	Minimum Level	Min. Swell 008888008	25,29,32		Main Spkr	124-663 R62
4	Great Level Tonebar	Great Tonebar 008888008	25,29,32		Main Spkr	124-663 R107
5	Leslie Level	U/M Tonebar 00888008 Leslie Swell Tab	U/M 25,29,32		Leslie Speaker	R162 124-663
6	Pedal Level	Pedal Tonebar 88	13		Main Speaker	R109 124-663
7	Swell Level	Principal 16' Geigen Principal 8' Spitz Principal 4'	Swell 25,29,32		Main Speaker	R39 124-654
8	Great Voices Level	Principal 8' Octave 4'	Great 25,29,32		Main Speaker	R22 124-655
9	Reverb	Leslie Swell 000607080	25,26,27 28,29		Main Speaker	
10	Sustain	a) Swell Sustain Tab Swell 8' tonebar	Key 25 Repeatedly		Main Speaker	R90 124-654
		b) Great Sustain Tab Great 8' tonebar	Key 25 Repeatedly		Main Speaker	R81 124-655
11	Minimum Thump	Vox Humana 8' only	Swell Key 61 repeatedly		Main Speaker	R95 124-654
12	Feedthru	All Swell tonebars position 8			Main Speaker	R2 124-595
13	Hum and Noise	Leslie Chorale		RMS VM 30 MV	Main Speaker Leslie Speaker	

34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45

A | B | C | D | E | F | G | H | I | J | K

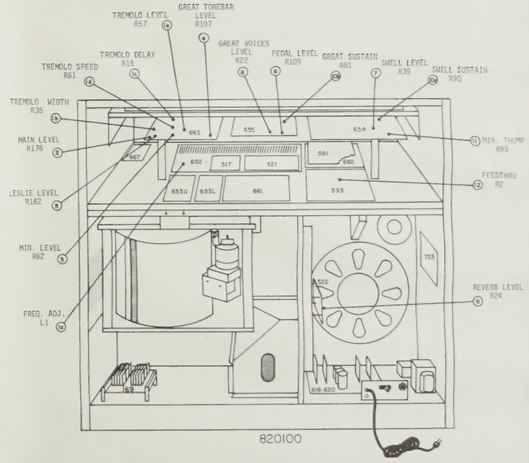


LOCATION	P.W.B. NO.	NAME
AA1	669	35 WATT AMP (main)
BA3	668	35 WATT AMP (leslie)
A10	617	TRANSPOSER
GP9	621	DEMULTIPLEX
A39	622	REVERB AMP
H9	591	MULTIPLEX
B14	685	LOGIC
EA3	618	POWER SUPPLY (domestic)
EA3	620	POWER SUPPLY (export)
D13	652	GENERATOR
F32	653U	SINE FILTER (upper)
G32	653L	SINE FILTER (lower)
G35	654	SWELL VOICING
GA1	655	GREAT VOICING
J38	661	STAIRSTEP PEDAL
A7	662	UNIVERSAL PRESET
C37	663	CONTROL PANEL MIXER
KZ6	667	CHIMES
H12	715	SUSTAIN COUPLET
H11	716	PERC B COUPLET
H11	720	PERC A COUPLET
AA2	723	MAIN/ECHO
CA0	EXP	EXPRESSION PEDAL ASSY
B1	PRE	PRESET SWITCH ASSY
E1	XPR	TRANSPOSER SWITCH ASSY
K9	UKB	UPPER KEYBOARD ASSY
K9	LKB	LOWER KEYBOARD ASSY
K16	PKB	PEDAL KEYBOARD ASSY
A41	M/E	MAIN/ECHO SWITCH ASSY

TEST AND ADJUSTMENT PROCEDURE

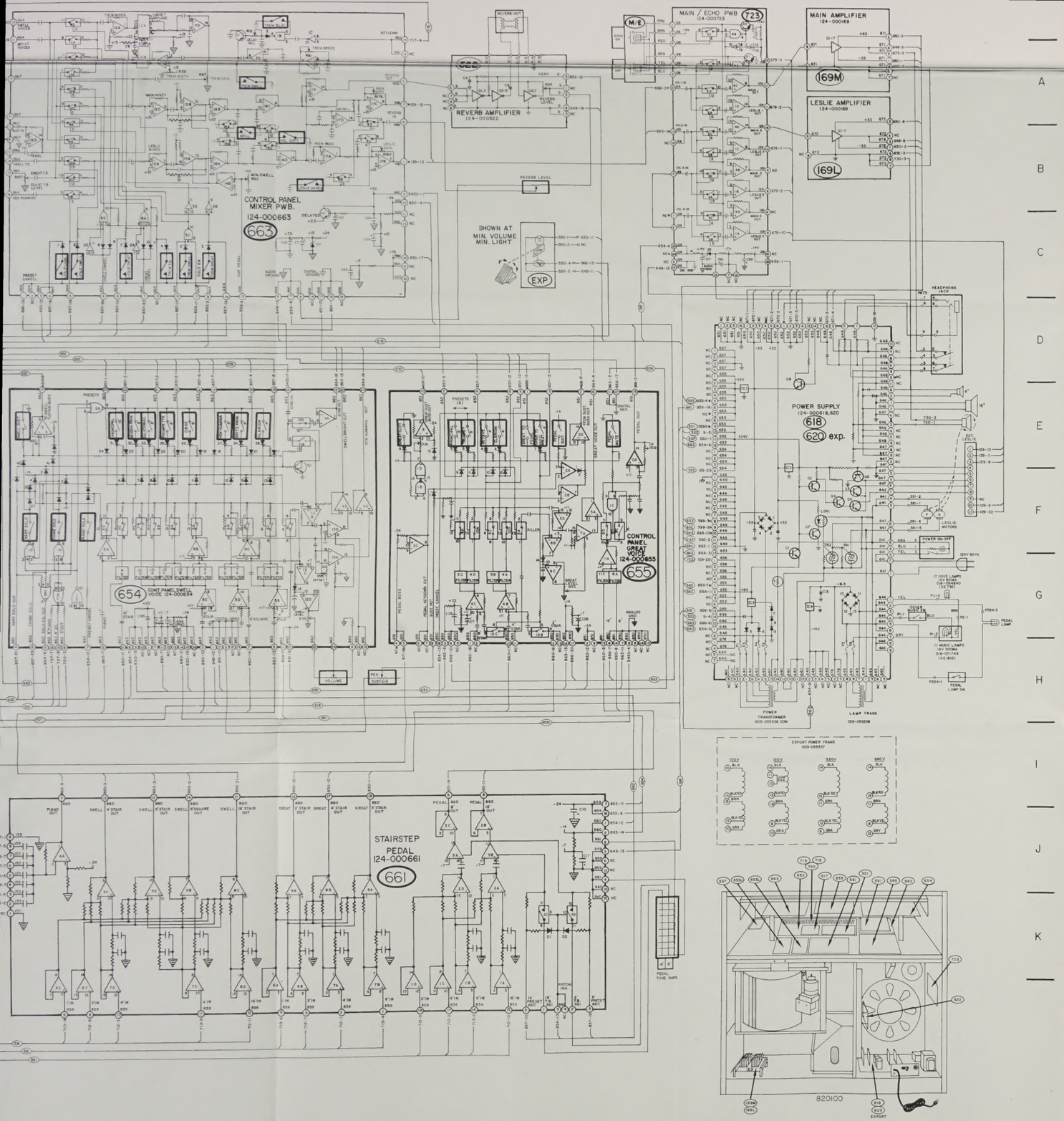
MODEL 820100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
1	Frequency & Tremolo	a) Swell 4' Tonebar		Freq. Counter	J543 Pin 4	Tuning Coil 124-652	a) 3136 ± 4Hz
		b) Tremolo Delay	Play any Swell Key	Freq. Counter	IC6 Pin 3 or 4	124-663 R35	b) 430 KHz ± 1% Tremolo Width
		c) Tremolo Delay	Key 25	Scope 2 V Div.		124-663 R15	c) Adjust Tremolo Delay for .8 seconds
		d)			IC 7 pin 7	124-663 R61	d) 152 ms Tremolo Speed
		e) Tremolo on Tonebar Swell Tonebar 008808008	25,29,32		Main Spkr	124-663 R57	e) 3.5V RMS
2	Main Level	Swell Tonebar 008808008	25,29,32		Main Spkr	124-663 R176	3.5V RMS
3	Minimum Level	Min. Swell 008808008	25,29,32		Main Spkr	124-663 R62	160mV (RMS)
4	Great Level Tonebar	Great Tonebar 008808008	25,29,32		Main Spkr	124-663 R107	3.5V RMS
5	Leslie Level	U/M Tonebar 008808008 Leslie Swell Tab	U/M 25,29,32		Leslie Speaker	R162 124-663	5.0 RMS
6	Pedal Level	Pedal Tonebar 88	13		Main Speaker	R109 124-665	8.0 RMS
7	Swell Level	Principal 16' Selgen Principal 8' Spitz Principal 4'	Swell 25,29,32		Main Speaker	R39 124-654	2.2V RMS
8	Great Voices Level	Principal 8' Octave 4'	Great 25,29,32		Main Speaker	R22 124-655	2V RMS
9	Reverb	Leslie Swell 000607080	25,26,27 28,29		Main Speaker		1.2V RMS
10	Sustain	a) Swell Sustain Tab Swell 8' tonebar	Key 25 Repeatedly		Main Speaker	R90 124-654	Adjust R90 for maximum decay time
		b) Great Sustain Tab Great 8' tonebar	Key 25 Repeatedly		Main Speaker	R81 124-665	Adjust R81 for maximum decay time
11	Minimum Thump	Vox Humana 8' only	Swell Key 61 repeatedly		Main Speaker	R95 124-654	Adjust R95 for minimum keying thump
12	Feedthru	All Swell tonebars position 8			Main Speaker	R2 124-595	Adjust R2 for minimum feedthru
13	Hum and Noise	Leslie Chorale		RMS VM 30 MV	Main Speaker		10 MV Max Swell
		"		"	Leslie Speaker		7 MV Max Swell



HAMMOND Console 820165

Logic & Control Wiring Diagram

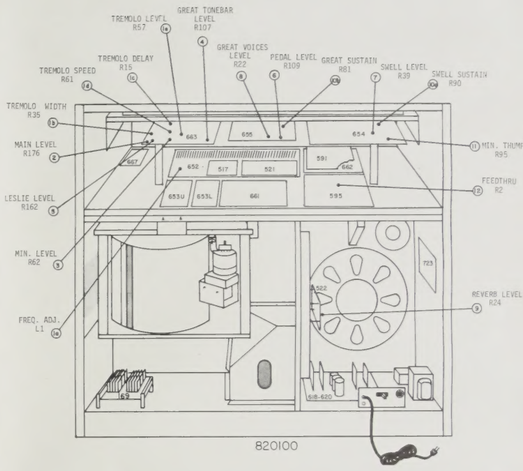


EA3	618	POWER SUPPLY (domestic)
EA3	620	POWER SUPPLY (export)
G13	612	GENERATOR
F32	653U	SINE FILTER (upper)
G32	653L	SINE FILTER (lower)
G35	654	SWELL VOICING
G41	655	GREAT VOICING
[illegible]	661	STAIRSTEP PEDAL
A7	662	UNIVERSAL PRESET
C37	663	CONTROL PANEL MIXER
K26	667	CHIMES
H32	715	SUSTAIN COUPLET
K31	716	PERC A COUPLET
K33	720	PERC A COUPLET
A42	723	MAIN/ECHO
C40	EP	EXPRESSION PEDAL ASSY
B1	PBC	PRESET SWITCH ASSY
E1	PTR	TRANSPOSER SWITCH ASSY
F9	UEK	UPPER KEYBOARD ASSY
F9	LEK	LOWER KEYBOARD ASSY
K16	PKB	PEDAL KEYBOARD ASSY
A41	SVL	MAIN/ECHO SWITCH ASSY

TEST AND ADJUSTMENT PROCEDURE

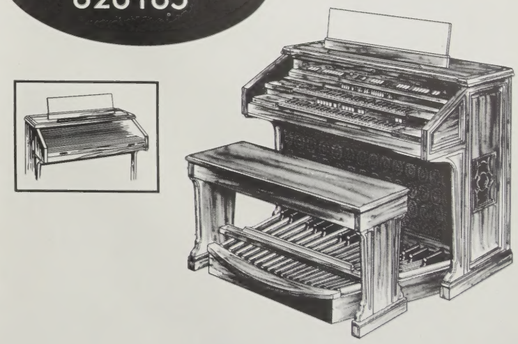
MODEL 820100

STEP	TITLE OF TEST	SETUP PROCEDURE (TABS DEPRESSED) (TONEBARS OUT)	KEY(S) DEPRESSED	SCALE & TYPE OF TEST EQUIP.	TEST POINT	POT AND BOARD	SPECIFICATION AND/OR ACCEPTABLE CONDITION
1	Frequency & Tremolo	a) Swell 4' Tonebar		Freq. Counter	J543 Pin 4	Tuning Coil 124-652	a) 3136 ± 4Hz
		b) Tremolo Delay	Play any Swell Key	Freq. Counter	IC6 Pin 3 or 4	124-663 R35	b) 430 KHz + 1% Tremolo Width
		c) Tremolo Delay	Key 25	Scope 2 V Div.		124-663 R15	c) Adjust Tremolo Delay for .8 seconds
		d)			IC 7 pin 7	124-663 R61	d) 152 ms Tremolo Speed
		e) Tremolo on Tonebar Swell Tonebar 008808008	25,29,32		Main Spkr	124-663 R57	e) 3.5V RMS
2	Main Level	Swell Tonebar 008808008	25,29,32		Main Spkr	124-663 R176	3.5V RMS
3	Minimum Level	Min. Swell 008808008	25,29,32		Main Spkr	124-663 R62	160mV (RMS)
4	Great Level Tonebar	Great Tonebar 008808008	25,29,32		Main Spkr	124-663 R107	3.5V RMS
5	Leslie Level	U/M Tonebar 00088008 Leslie Swell Tab	U/M 25,29,32		Leslie Speaker	R162 124-663	5.0 RMS
6	Pedal Level	Pedal Tonebar 88	13		Main Speaker	R109 124-665	8.0 RMS
7	Swell Level	Principal 16' Gelgen Principal 8' Spitz Principal 4'	Swell 25,29,32		Main Speaker	R39 124-654	2.2V RMS
8	Great Voices Level	Principal 8' Octave 4'	Great 25,29,32		Main Speaker	R22 124-655	2V RMS
9	Reverb	Leslie Swell 000607080	25,26,27 28,29		Main Speaker		1.2V RMS
10	Sustain	a) Swell Sustain Tab Swell 8' tonebar	Key 25 Repeated-ly		Main Speaker	R90 124-654	Adjust R90 for maximum decay time
		b) Great Sustain Tab Great 8' tonebar	Key 25 Repeated-ly		Main Speaker	R81 124-665	Adjust R81 for maximum decay time
11	Minimum Thump	Vox Humana 8' only	Swell Key 61 repeated-ly		Main Speaker	R95 124-654	Adjust R95 for minimum keying thump
12	Feedthru	All Swell tonebars position 8			Main Speaker	R2 124-595	Adjust R2 for minimum feedthru
13	Hum and Noise	Leslie Chorale		RMS VM 30 MV	Main Speaker		10 MV Max Swell
				"	Leslie Speaker		7 MV Max Swell



HAMMOND Console 820165

Logic & Control Wiring Diagram



Console 820165

LOCATION	P.W.B. NO.	NAME
A43	169M	35 WATT AMP (main)
B43	169L	35 WATT AMP (leslie)
A10	517	TRANSPOSER
G29	521	DEMULTIPLEX
A39	522	REVERB AMP
H9	591	MULTIPLEX
B14	595	LOGIC
E43	618	POWER SUPPLY (domestic)
E43	620	POWER SUPPLY (export)
D13	652	GENERATOR
F32	653U	SINE FILTER (upper)
G32	653L	SINE FILTER (lower)
G35	654	SWELL VOICING
G41	655	GREAT VOICING
J38	661	STAIRSTEP PEDAL
A7	662	UNIVERSAL PRESET
C37	663	CONTROL PANEL MIXER
K26	667	CHIMES
H12	715	SUSTAIN COUPLET
H11	719	PERC B COUPLET
H11	720	PERC A COUPLET
A42	723	MAIN/ECHO
C40	EXP	EXPRESSION PEDAL ASSY
B1	PRE	PRESET SWITCH ASSY
E1	XPR	TRANSPOSER SWITCH ASSY
K9	UKB	UPPER KEYBOARD ASSY
K9	LKB	LOWER KEYBOARD ASSY
K16	PKB	PEDAL KEYBOARD ASSY
A41	M/E	MAIN/ECHO SWITCH ASSY

TEST AND ADJUSTMENT PROCEDURE

MODEL 820100

STEP	TITLE OF	SETUP PROCEDURE	KEY(S)	SCALE &	TEST	POT AND	SPECIFICATION AND/OR